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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,939	03/19/2004	Robert A. Elick	ELI005-159	7174

7590 09/27/2006

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EXAMINER
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CHAUDHRY, SAEED T

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 09/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/803,939

Applicant(s)

ELICK ET AL.

Examiner

Saeed T. Chaudhry

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 10-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 3/19/04.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### **Election/Restriction**

Applicant's election with traverse of Group I, in Paper No. 08142006 is acknowledged. The traversal is on the ground(s) that group product claims 1-9 and method claims 19-22 are concerned with sensing a presence of washing fluid in an overflow tube and initiating a drain operation for a dishwasher based thereon. This is not found persuasive because Group II, claims 19-22 does not requires a controller or the apparatus as claimed can be used to practice another and materially different process such as draining soiled fluid while washing step is performing or draining only soiled fluid. The reference anticipate the apparatus does not essentially anticipate the process claims.

The requirement is still deemed proper and is therefore made FINAL.

### **Claim Rejections - 35 USC § 103**

**The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:**

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hegeman in view of Thies et al.**

Hegeman (6,605,157) discloses a dishwasher having washing chamber (conventional); at least one wash arm for spraying (144); a pump unit with a motor (172); a filter chamber (190) adapted to receive portion of the washing fluid for entrapping soil; a drain exposed to the filter chamber; an overflow tube (314) leading upwardly from the filter chamber such that washing fluid rises within the overflow tube upon collection of soil in the filter chamber; and flow sensors (not shown) drain line (304) water level sensors. By monitoring conditions in fine filter assembly (190) and drain line 304, drain pump assembly drain fine filter assembly 190 and sump 150.

A dishwasher system 308 wherein common components of dishwasher system 100 are indicated with like reference characters. Dishwasher system 308 includes a pressure actuated fine filter check valve 310 for regulating flow through fine filter drain tube 192. Fine filter check valve 310 is normally closed so that fine filter assembly 190 is pressurized. Wash fluid pumped into fine filter assembly 190 may only exit fine filter assembly through fine filter screen grid 262 (shown in FIG. 8). While indirect feeding of fine filter assembly 190 through conduit feed passage 248 and fine filter inlet passage 240, rather than directly from main pump assembly 172 provides a reduced pressure in fine filter assembly 190, as filter screen grid 262 clogs with sediment, pressure in fine filter assembly 190 rises.

Unlike known fine filter assemblies including a pressure relief port integral to fine filter assembly itself, a pressure relief tube 312 is provided in flow communication with fine filter assembly 190 to prevent pressure in fine filter assembly 190 from exceeding a predetermined

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level. In one embodiment, pressure relief tube extends adjacent conduit 154 that feeds mid-level spray arm assembly 148 (shown in FIG. 1) and the upper spray arm assembly (not shown) and includes a vertical portion 314 that extends upwardly for a height H that is less than a height of upwardly extending drain line 304. Vertical portion 314 includes an open top 316 and hence forms a standpipe to regulate fluid pressure in fine filter assembly 190. As pressure rises in fine filter assembly 190, fluid flows into pressure relief tube 312 and begins to rise in vertical portion 314. Pressure in fine filter assembly 190 is therefore balanced by the fluid column in relief tube vertical portion 314. When pressure in fine filter assembly 190 is sufficient to force fluid the full height H in vertical portion 314, fluid overflows vertical portion 314 and through open top 316.

Pressure may therefore rise in fine filter assembly 190 up to a maximum pressure, determined by height H of the fluid column in vertical portion, and the maximum pressure is then maintained in fine filter assembly 190. Pressure relief tube open top 316 is distanced from downwardly directed fluid discharge ports 302 of lower spray arm assembly 144, thereby avoiding possible pressure effects of operation of lower spray arm assembly 144 that could compromise pressure relief in fine filter assembly 190. Also, the location of pressure relief tube 312 alongside conduit 154 and near a vertical wall of tub 104 renders pressure relief tube open top 316 less vulnerable to soiled fluid re-entering the wash system. Still further, because height H of pressure relief tube is less than a height of drain line 304, fluid flows through open top 316 of pressure relief tube 314 rather than continuing to rise in drain line 304 and eventually flowing into a sewer system (not shown).

In further embodiments, enhanced fine filter pressure regulation is achieved with optimization of main pump assembly 172, optimization of lower spray arm assembly, optimization of downwardly directed fluid discharge ports 302, optimization of fine filter assembly 190 geometry and flow paths, flow sensors, and/or drain line 304 water level sensors (not shown). By monitoring conditions in fine filter assembly 190 and/or drain line 304, drain pump assembly 174 may be activated to open check valves 186 and 310 to drain fine filter assembly 190 and sump 150.

Fine filter drain tube check valve 310 facilitates pressure regulation in fine filter assembly and prevents fluid in drain line 304 from flowing back into fine filter assembly 190 when main pump assembly 172 is de-energized. It is appreciated, however, that the benefits of the above-described fine filter pressure relief system, may be achieved in the absence of filter drain check valve 310 (see col. 8, line 51 through col. 9, lines 55 and Figs 1, 14, 15).

The reference fails to disclose a controller linked to the sensor for initiating a drain operation for the dishwasher.

In an analogous art, Thies et al (6,103,017) disclose a dishwasher having washing chamber (conventional); at least one wash arm for spraying (22); a pump unit (28) with a motor (34); a filter chamber (46) adapted to receive portion of the washing fluid for entrapping soil; a soil collector (50); a pressure sensor (52) measure pressure within the soil collector; a drain (55) exposed to the filter chamber; a controller for controlling the operation of the recirculation pump and the drain pump, said controller being operable to turn the recirculation pump on during a wash phase, and while the recirculation pump is running, to turn the drain pump on and off in order to move particles from the sump to the drain, said controller being operable to turn

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the drain pump on at the end of the wash phase in order to initiate a drain phase wherein the drain pump drains the sump of liquid. A pressure sensor (52) sensing the pressure within the soil collector wherein the drain pump is energized in response to the pressure within the soil collector. The pressure sensor (52) can be either an analog device or a digital device (see Fig. 2 and col. 3, line 44 through col. 4, line 60). The reference fails to disclose a overflow tube leading upwardly from the filter chamber.

It would have been obvious at the time applicant invented the claimed dishwasher to include a controller as disclosed by Thies et al in the dishwasher of Hegeman for the purpose of controlling the dishwasher. It has been held obvious to shift the location of parts (see *In re Japikse*, 86 USPQ 70 (CCPA 1950)). Therefore, it would have been obvious to locate the pressure sensor in the overflow tube rather than in the soil collector. Further, it is well known in the art to sense the presence of washing fluid by completing an electric circuit within the overflow tube. It is disclosed by Thies et al that soiled washing fluid is passes upwardly through the filter screen 48 and back to into the sump 18 leaving the soil within the separation channel 46 to provide clean washing fluid to the sump. Therefore, one of ordinary skill in the art would use a filter or filter having a housing at the top of the tube 316 to prevent the soiled washing fluid entering the sump.

**Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hegeman in view of Thies et al as applied to claim 1 above, and further in view of Whipple, III et al.**

Hegeman and Thies et al were discussed supra. However, the reference fails to disclose means for sensing a current drawn by the motor of the pumping unit.

An analogous art, Whipple, III et al (5,330,580) disclose sensing a current of pump motor to determine the washing fluid in the dishwasher.

One embodiment of the sensor for detecting power consumption surges included in device 60 comprises a sensor that measures the magnitude of the difference in phase angle between the alternating current of motor 75 and the alternating voltage of motor 75. For an ideal electric motor operating with alternating current, when the motor has no load across it or when the motor performs substantially no work, the alternating current of the motor should lag the alternating voltage of the motor by a phase angle difference approaching 90.degree.. Likewise, when the motor is performing its maximum amount of work, such as when it is operating at full design capacity, the current of the motor and the voltage of the motor should be substantially in phase. Thus, measuring the magnitude of the phase angle difference between the current and voltage of the motor is one method of detecting the power consumption of the motor and, thus, monitoring machine load (see col. 7, lines 31-54).

It would have been obvious at the time applicant invented the claimed dishwasher to include means for sensing a current drawn by the motor of the pump as disclosed by Whipple, III et al into the dishwasher of Hegeman for the purpose of controlling the drain operation of the dishwasher. Further, it is well known in the art to use a separate pumping unit as disclosed by Hegeman for separately drain the soiled fluid. Furthermore, it is conventional to utilize a water valve for introducing water into the dishwasher and introduce fresh fluid into the dishwasher after draining the soiled fluid.

**Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hegeman in view of Thies et al as applied to claim 1 above, and further in view of Neff et al.**

Hegeman and Thies et al were discussed supra. However, the reference fails to disclose a turbidity sensor to determine a soil level in washing fluid within the tub.



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Neff et al (5,957,144) disclose a dishwasher having a turbidity sensor disposed within said dishwasher for sensing when the turbidity level of the water in said dishwasher is above or below a predetermined turbidity level; said turbidity sensor being connected to both said drain motor and said water valve and being responsive to a sensed turbidity level below said predetermined level to deactuate said drain motor to prevent water from draining from said dishwasher and at the same time to cause said water valve to be placed in said disabled condition to prevent introduction of water to said dishwasher (see claims, col. 1, lines 32-37 and col. 2, lines 54).

It would have been obvious at the time applicant invented the claimed dishwasher to include a turbidity sensor as disclosed by Neff et al into the dishwasher of Hegeman for controlling the cleanliness of washing fluid in the dishwasher.

***Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saeed T. Chaudhry whose telephone number is (571) 272-1298. The examiner can normally be reached on Monday-Friday from 9:30 A.M. to 4:00 P.M.***

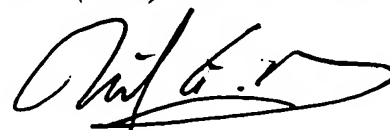
***If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Michael Barr, can be reached on (571)-272-1414. The fax phone number for non-final is (703)-872-9306.***

***When filing a FAX in Gp 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communication with the PTO that are for entry into the file of the application. This will expedite processing of your papers.***

***Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-1700.***

***Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).***

**Saeed T. Chaudhry**  
Patent Examiner



**MICHAEL BARR**  
SUPERVISORY PATENT EXAMINER